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CASES OF PERIPHERAL PARALYSIS, THEIR CAUSES AND NATURE.

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THE nerves are generally protected from slight injuries by their situation. This is not, however, universal, and several nerves pass near the surface or over the bony prominences, so as to be more or less exposed to injury. Of course, severe injuries may affect nerves as well as other structures. The protection afforded by being on the inside of a joint, as in the axilla, fails in case of dislocation, and the head of the displaced bone may seriously injure the neighboring nerves.

Symptoms arising from pressure vary greatly, according to the severity with which the cause acts and the length of time during which the pressure is exerted. This probably explains a difference of opinion in regard to the causation of paralysis of the radial nerve. Duchenne, in his second edition, recognizes only a rheumatic origin. Panas, in a memoir read in 1871 before the Académie de Médecine and lately published,* refers all such cases to pressure as the cause. Duchenne, in the third edition of his work, refers to Panas's memoir, and says: "I admit that, in some cases, compression of the posterior part of the fore-arm or of the radial nerve should exercise a certain influence; but it seems to me unquestionable that, in the numerous clinical cases which I have observed for more than twenty years (about one hundred), the action of cold has played the chief part in the etiology of this form of paralysis."

The radial nerve is not the only one which suffers from pressure or the action of cold, and it is not unlikely that all such cases agree in symptoms more closely than is apparent from published records, the intensity of some symptoms varying in different cases.

When nerves are divided, the peripheral end and the muscles which they supply degenerate; after reunion of the nerve, restoration, more or less complete, takes place. The electrical reaction of the nerves and muscles suffers a corresponding change, which is characteristic. A few days after the injury, the muscles lose their sensitiveness to the action of the faradic or induced current, and this loss increases until the strongest faradic current, applied by means of moist electrodes to the skin over the muscle or its nerve, no longer excites contraction. When a nerve is entirely separated from its centre, this extreme limit of change is reached within two weeks. In many cases, not all, the reaction of the muscle to the galvanic current is increased, while that for the faradic is diminishing. Later, as the degenerative change in nerve and muscle advances, the reaction to the galvanic current diminishes and finally disappears. With this, there is more or less atrophy of muscles.

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* Archives Génerales de Médecine. Juin, 1873.

When the nerve is restored, the reaction to the galvanic current usually reappears first, then voluntary motion, and, finally, the reaction to the faradic current. This order of return to normal conditions is not invariable.

If only a few fibres of a nerve trunk are injured, only a partial paralysis will follow, unless subsequent inflammation involves the whole trunk. One muscle alone may be paralyzed, or, if there is more than one source of innervation, it may be only weakened, and may still respond to the will and to electricity, though less perfectly than in health. If, instead of division of fibres, there is only a slight injury, every grade of change in their functional relations may be found from normal to entire loss. To this, and perhaps owing to hasty observation, is probably due the difference in opinion to which reference has already been made.

The means by which nerves may be compressed are various: a crutch pressing on the nerves in the axilla is not uncommonly the agent by which the compression is made; a wide board carried under the arm may act in the same way; one writer mentions badly fitting corsets; a dislocated bone, humerus, or femur, or other bone, may press on the nerves in the neighborhood of the joint; certain positions taken by the limbs during sleep, or the pressure of one part on another, as the head on the arm; a bandage applied tightly to a limb,—these are ways in which pressure, sometimes very gentle, but long-continued, may cause paralysis. A fall or a blow may exercise a more violent pressure of short duration, and is not unfrequently the cause of local paralysis and wasting. As the nerve is more severely bruised, and in part or entirely ruptured, compression is rather too mild a term, and contusion describes the injury better; but sometimes it is not easy to decide whether compression or contusion is the better. Often, in such cases, the muscles are paralyzed and suffer atrophy as a direct result of the injury.

That the severity of the cause producing the lesion has a controlling influence over the change in the electrical reaction, is the probable explanation of the difference in the following cases.

CASE I.—D. C., aged 23, fell, about seven weeks before I saw him, bruising his shoulder and breaking his collar bone. The deltoid and biceps were extensively wasted; there was inability to raise the arm or to flex the elbow. The muscles of the fore-arm were not affected. The triceps brachialis was scarcely at all implicated. The strongest faradic current the patient could bear caused very little if any contraction in the deltoid and biceps. The skin covering these muscles was very insensitive. The patient was seen only a few times, and gave up the treatment by electricity, saying he did not have time to attend. The atrophy of the deltoid may have been due to direct violence; that of the biceps, and the slight injury to the triceps, were probably secondary.

CASE II.—Lizzie B. was first seen early in April. About January 1st, she fell, striking her shoulder. The arm felt lame, but was not very painful. Immediately after, she was attacked with variola, and only three weeks later was it discovered by her physician that the arm was out of place. He replaced it, and the arm remained bandaged for five or six weeks. As nearly as could be learned from her statement, it would seem that immediately after the fall she had some power over the arm, but while sick and before the bandage was put on this was lost and was not recovered. She first applied at the City Hospital as an out-patient, and Dr. Bolles sent her to me.

When seen, the fingers were weak, the thumb and forefinger being weaker than the others. All the muscles of the fore-arm responded, however, to the will. The elbow could be bent and nearly straightened. The only motion of the arm at the shoulder-joint was a slight pendulum-like swing backwards and forwards. The shoulder could be raised a little, as in a shrug. There was a sense of pricking just over the head of the humerus and at the elbow, not in the fingers. There was lessened sensibility over the shoulder and on the outside of the arm. Sensation inside of the arm, over fore-arm and hand was normal. There was a "hard ache" in the shoulder, so severe as to keep her awake at night.

The deltoid, supra- and infra-spinatus, and perhaps the serratus magnus, were atrophied, especially the anterior part of the deltoid, causing the head of the humerus to project so prominently as to raise the question at first as to whether it was in its proper place. All the muscles responded fairly well to electricity, making allowance for their diminished bulk.

Galvanism was used, the positive pole being placed on the back of the neck, and the negative on the nerves, and stroked over the muscles. Passive motion was also used, and she was directed to rub the shoulder. The pain became less, so that she could sleep better. After three applications of electricity, she could use the arm to sew, could pin her cloak, and could raise the arm somewhat from the side.

She attended only very irregularly, being away for many days out of town. The last record was made after nine applications of electricity, more than a month after the first visit. The deltoid had then increased in bulk, covered the acromion and head of the humerus much more than at first. Motion was possible in all directions, but the arm, with fore-arm bent at right angles, could be rotated outwards only about one-half, and could be raised only to a horizontal. She could sweep, sew and iron, but had not strength enough to wash.

It may be a question as to whether the humerus was dislocated, or whether the atrophy of the deltoid caused it and the acromion to become so prominent as to simulate a dislocation; also, whether the restrained position of the arm had any part in the causation of the atrophy. This seems unlikely, as six weeks' disuse and the bandages necessary in case of dislocated humerus would not be likely to affect the deltoid. And she thought motion was lost before the bandage was applied.

While this case was under treatment, I saw another patient, a lady, who, from a fall three months previously, was suffering from inability to use her arm. The same muscles were affected, though the posterior fibres of the deltoid suffered more than the anterior. There were some symptoms of neuritis, and hyperæsthesia over the course of the nerves, with loss of faradic contractility, but preservation of susceptibility to the galvanic current. The treatment was short, owing to removal out of town, and but little advantage was gained from the two or three applications made.

In these cases, the cause was almost identical in nature, but undoubtedly varied in intensity. A similar variety in the symptoms, especially in the electrical reaction of the muscles, is found. In the first case, only seven weeks had elapsed from the time of the accident until I saw him, yet there was extensive atrophy and loss of electromuscular contractility. In the second case, after three months, the latter was still retained; while in the third case, after three months, it was absent. In all, there was paralysis as a prominent symptom, with anæsthesia in two and hyperæsthesia in one.

Cases of paralysis from dislocation of the humerus are reported in medical writings. I have never seen a case, unless that of Lizzie B. is such. A while since, I was consulted by letter in regard to a patient suffering from such an injury. The deltoid and biceps were most affected, and there was partial anæsthesia over the deltoid.

Cases of paralysis following dislocation of the femur are rare. An interesting case is reported by Onimus and Legros.* A man, 46 years of age, received a mass of earth and stone on his left thigh. There was a dislocation, probably ilio-ischiatic of the femur. There was severe pain, anæsthesia and inability to move the leg. After reduction, the pain ceased, but the numbness remained, and he could not walk. After a slight attack of erysipelas of the face, pain in the leg returned. Five months after the accident, the left leg was found much emaciated, colder to the touch than the other, œdematous, especially around the tibio-tarsal joint. The leg could be feebly flexed and raised, the foot could not be raised nor the toes extended; toes flexed only partially. Sensation was much diminished; pressure was painful. Walking was not possible, and standing was painful. Electro-muscular contractility was very much enfeebled in all the flexor muscles of the leg, somewhat so in the extensors. It was diminished in the muscles of the calf, and gradually disappeared in the peronei and the tibialis anticus and extensor communis. Under the application of the galvanic current, the pain ceased, the œdema disappeared and the patient could walk without a cane.

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* Traité d'Electricité Médicale. Paris, 1872.

A much more common seat of paralysis is the radial nerve. It occurs, generally, during sleep. It is in regard to this paralysis that the difference of opinion between Duchenne and Panas, above referred to, exists.

Duchenne, in his third edition, says that the paralyzed muscles retain intact their electro-muscular contractility, and generally the muscular sensibility is not diminished. Once only has he observed enfeeblement of the cutaneous sensibility in the fore-arm and hand.

Panas also mentions the same characteristics, adding, however, that cutaneous sensibility may be perverted.

In the cases which have happened to come under my care, the electro-muscular contractility, as compared with the other side, has been found diminished when such comparison has been made at a long enough interval after the origin of the paralysis. If the two sides are not compared, the contractility remaining is sometimes so great that it might be considered normal; yet on making the comparison it is found more or less diminished. I have found the cutaneous sensibility for touch and temperature and pain almost always diminished, or perverted, and for electricity sometimes increased. In the cases where the paralysis has been most marked and existed longest, I have been able to see no difference in its nature or quality from that found in the cases due to severe lesion above recorded, excepting that the muscular atrophy was not marked enough to be recognized. Had the paralysis continued longer, it is possible that atrophy might have been found also.

In the number of this JOURNAL for July 6th, 1871, I published four cases of this form of paralysis. In three, the electro-muscular contractility was diminished as compared with the other side; not mentioned in the other. Sensibility was diminished in three, perverted in the other. There was also some œdema of the hand, discolored surface, a mottled appearance and diminished heat as measured by the touch, once by thermometer.

In several cases which I have since had under treatment, the same general characteristics have been observed in regard to sensation, coloration of skin, and apparent temperature. In only one has the electro-muscular contractility, as compared with the other side, been noted; the statement has merely been made that the muscles affected responded to faradization. In one case, it is noted that the muscles moving the thumb and index finger responded poorly to the faradic current, better to the galvanic.

Of the cases first published, in Case I., the paralysis came on while lying with the arm over the edge of a sofa in a drunken stupor; in Case IV., it came on during heavy sleep after great fatigue and a glass of whiskey; in Case III., it came on as the direct result of carrying a basket of lemons on the shoulder and arm, the basket pressing on the outside of the arm, over the course of the radial nerve. Case II. may have been caused by a draught of cold air, in accordance with Duchenne's theory.

In the half-dozen recent cases, the paralysis was first noticed after sleeping. In only two was there any chance that cold was the cause. In one of these, seen in March, the patient said that, being warm, she threw off a part of her covering, but was not aware that she was chilled; she thought she lay on her arm, and slept rather heavily towards morning. The other was very slightly affected, and is for that reason reported.

Case III. Mrs. L. Seen with Dr. Ingalls. Had rheumatism ten years ago, and chronic arthritis since; at times pain in arm, especially during dull days. The joints were rather swollen. Cardiac enlargement with murmurs. The day before I saw her in the evening, she fell asleep in her chair; could not tell on which hand she leaned; slept less than forty-five minutes. On awakening, the left arm felt numb and prickly, and she had lost in part the use of the left hand. The sense of prickling passed off, but the power to use the hand did not return. The back of the hand, the thumb and fingers, were less sensitive than normal, the change being most marked in the thumb. The extensors were weak; pronation and supination were possible; flexion was slightly interfered with, there being a sense of stiffness. The hand was somewhat swollen, slightly congested, but not cold. All the muscles responded to the faradic current.

The effect was so recent, and seemed so slight that only bathing in hot water and friction were advised. Recovery was perfect.

In this case, perhaps, time enough had not elapsed for change in the electrical reaction to appear. Whether pressure was the cause, or cold, it might be difficult to decide; certainly the symptoms resembled those found in other cases where pressure was undoubtedly the cause.

Taking the accounts given by Duchenne and Panas, it will be seen that several of the cases which I have reported differ in regard to the electro-muscular reaction, and all differ in regard to the condition of the cutaneous sensibility.

When a patient is seen the day after the origin of the trouble, it may well be supposed that the electrical reaction of the muscles would be normal, but after a few weeks have passed it would probably be found, on comparing the two sides, that there is, almost always at least, a slight difference. The sensitiveness of the muscles to electrical stimulants varies much in different individuals, depending perhaps upon the amount of adipose tissue, the softness and suppleness, or dryness of the surface, and perhaps, more than all, upon the person's occupation. I have found the greatest susceptibility in teachers of the piano-forte. Hence, if only the affected arm is examined, the electrical contractility may be considered normal, when really it is diminished.

The cases which have come under my observation, where cold could be considered as the cause of the paralysis, were not essentially different from those where it was caused by pressure, unless it be that the electro-muscular contractility was either not affected or not tested as compared with the other side. In a case reported by Rosenthal,* which was probably caused by chill, it was decreased. In a case reported by Onimus and Legro, of so-called rheumatic paralysis of the anterior tibial nerve, it was likewise slightly diminished. In another case reported by them, the electrical reaction of the deltoid was below the normal for the faradic current, increased for galvanic.

It is hardly necessary to multiply instances.

As in all these cases the symptoms are identical, making allowance for variations in the severity with which the injurious agent acted, and the difference of time between the origin of the trouble and the examination, it is reasonable to consider the condition of the nerves, induced by these different agents, the same. It is only another instance where the same pathological condition is produced by different agents.

There is first pain, a peculiar pricking sensation, with this is numbness, and loss of motor power. The pricking sensations pass away, but the numbness and loss of power persist. The limb generally becomes œdematous, has a mottled or purplish color, and is frequently cooler than its fellow. To this may be added, in cases which are not seen soon after their origin, a diminution of faradic contractility in the muscles, sometimes the galvanic current acting more readily than normal. In recent cases, and in cases of slight intensity, some symptoms may be wanting.

A slight neuritis would explain all the symptoms.

The pricking is caused by irritation of the sensitive fibres, the numbness and loss of motor power by impaired conductility due to the inflammation. The œdema and discoloration, and the sinking of temperature, are due to implication of the vaso-motor fibres in the inflammation. The cause being slight, or of short duration, these symptoms are not found in their highest degree of development, and some cases recover easily; others, where the cause acted with more severity, are more protracted, and a few only result in atrophy and permanent disability.

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* Electrotherapie, 2d Edition, p. 269.

Jaccoud, describing the symptoms of neuritis, gives as the principal, swelling of the nerve, no fever, pain following the course of the nerve, even to its terminal branches, increased by pressure, tactile sensibility diminished with persistence of spontaneous pain—painful anæsthesia. In mixed nerves, these symptoms are accompanied with startings and contractions of the muscles, to which soon succeed motor paralysis with loss of reflex movements and of the electric contractility. If the paralysis persists, muscular atrophy, lesions of nutrition, erythema, vesicular eruptions, and, in chronic cases, deposit of pigment and arthropathy. These symptoms are similar to those found in the cases already reported.

It would seem, from the consideration of the cases reported, that Duchenne is wrong in regard to the exciting agent of paralysis of the radial, and that, as Panas contends, it is generally caused by pressure. I cannot help thinking that both are wrong in regard to some of the important symptoms which are present in nearly every case, especially if it is of more than a week's duration. It is hardly necessary to refer to other authors, as these two represent the two phases of opinion, and most others refer to Duchenne. Eulenburg has, however, stated the symptoms correctly, and says that Duchenne is not correct in denying the loss of electro-muscular contractility. He also recognizes pressure during sleep as a cause.

Another cause of neuritis, which is not generally mentioned as such in text books, is overwork.

The following is an interesting case, showing as it does, in a mild degree, all the symptoms usually found in such cases. The patient was sent to me by Dr. Ingalls.

Case IV., Miss E. D., aet. 22, about three weeks before I saw her, while taking care of a brother sick with typhoid fever, noticed a tingling in the fingers of the right hand; they and the hand were also numb. These sensations occurred in the day time; there was no special strain or other cause for them, except the constant labor of nursing. With the numbness, was motor weakness. There was a steady increase of the affection. The pain was worse at night, and for a week began in the shoulder externally, and ran down to the fingers.

Two points could be distinguished as such, 3-8 inch nearer on right than on left back of hand, and on palmar end of right index finger 1-8 inch nearer. Sense of prick was more acute on the right, but the sense of mere contact with a blunt steel was more acute on the left.

There was a tenderness over the nerve, at the bend of the elbow, and over the ulnar nerve. The action of biceps and of the extensors in forearm was not easy, there being a sense of stiffness. The faradic contractility of the extensors of forearm was diminished; the galvanic contractility was increased, the muscles reacting to ten cells on the right, and to only fourteen, or perhaps thirteen, on the left. The flexors were not tested by electricity.

The galvanic current from fifteen cells was used, the positive pole being placed on the back of the neck, the negative passed over the muscles and held quietly over the nerves. After two applications, the faradic contractility of the muscles had improved. On the fourth visit, the sensation on back of the two hands was equal, and the same as it was on the left at the first visit. Ten days after I first saw her, it is recorded that she had no pain in the arm; it was strong and all right.

Soon after, other cases quite similar were seen, one seeming to originate from overwork in nursing, another from overuse of the arm in sewing and playing the piano, with, perhaps, a strain as predisposing cause; two others were from overwork in playing piano. In two cases, the electro-muscular contractility seemed increased on the affected side.

In some of these cases, the affection of the nerve perhaps hardly deserved the name inflammation, possibly congestion would be more correct, there being, indeed, only the first stage of inflammation where several of the functions were increased rather than diminished.

Of paramount importance to the patient is the fact, that all these cases, so far as I know, where treatment has been commenced early and persisted in, have recovered. Where treatment was delayed, the cure was longer in being reached, but generally could be expected. The longest duration was two years before treatment; treatment extended through three months with almost complete recovery.

The treatment consists in the application of either the faradic or galvanic current to the muscles and nerves affected. The galvanic current would probably be found more generally successful in a shorter time, though in many cases the other accomplishes all that is desired.

A few cases, as in Case III., may recover without electricity, but in most cases that agent will at least hasten a cure, and in other cases a cure has not been obtained after a year or more, without the use of the electricity, but followed soon after that agent was employed. It is not, then, always safe to wait for the unaided efforts of nature.

For many weeks past, the British authorities have been busily engaged in fitting out a hospital ship to send to the seat of war on the West Coast of Africa. Probably, before this, the *Victor Emmanuel* has been despatched on her errand of mercy. Originally a war steamship of more than 5000 tons, she was, several weeks ago, placed at the disposal of the medical department of the War Office, with the request that they should signify their wishes as to her equipment. No labor, mental or physical, and no expense have been spared to make the vessel in every respect complete as a hospital ship. She has been fitted by Messrs. Savory & Moore, of London, with a surgery in which is included every facility for dispensing, and also with a very complete operating table.

Progress in Medicine.

REPORT ON SURGERY.

By J. Collins Warren, M.D., Boston.

Pneumatic Aspiration.

The appearance of Dr. Dieulafoy's treatise on the pneumatic aspiration of morbid fluids* enables us to study somewhat more in detail the manner of using the aspirator and the advantages claimed for it as a means of diagnosis and treatment. The peculiarities of this instrument, in which it differs from others intended for the same purpose; consist, first, in the extreme fineness of the needles used for puncture, and, secondly, in the vacuum which is established in the instrument *previous* to puncture. To be properly used, a vacuum must be first created in the body of the instrument, to which the needle and tube must be attached before puncturing the region to be explored. This latter precaution is not always attended to by those not accustomed to its use, and the needle is first thrust in and attached subsequently, a proceeding which naturally sets at naught the peculiar advantages of the instrument. When the needle has passed a short distance through the tissues, the communication between the needle and the vacuum must be opened, thereby transmitting the aspiratory power to the needle itself, which may now be deliberately and cautiously pushed forward in search of the fluid. This, when reached, is instantly indicated by the jet which passes the index and fills the aspirator. Care should be taken not to press the parts to aid the flow, and they should be disturbed as little as possible; when a sufficient quantity of fluid has been removed, the needle should be gently withdrawn, the aspiratory force preventing any drops escaping from its extremity into the surrounding tissues. By observing the various precautions enjoined, the least possible amount of injury is inflicted upon the parts, and Dr. Dieulafoy claims to have "thrust these needles into almost every part of the body, into the joints, the liver, the spleen, the bladder, the intestines, the lungs and the meninges," without ever having seen consecutive accidents. Although time may doubtless prove this instrument to be extremely valuable in the diagnosis and treatment of certain diseases, we doubt if it will meet the enthusiastic and Frenchman-like expectations of its inventor. He states in regard to the value of the method, "by aspirations, therapeutics are simplified; all these different modes of treatment are fused into one; punctures made by means of the trocar, caustics and their eschars, incisions and their pathological sequences are disappearing day by day, and giving place to the aspiratory needle . . . in one word, it is sufficient for almost every need."

Passing over the chapter concerning the treatment of hydatid cysts and abscesses of the liver by aspiration, we come to a subject of more interest to the surgeon, namely, the treatment of retention of urine by this means. The advantages claimed for this method over other methods of tapping the bladder are two-fold. It is said to be both a perfectly harmless and a painless proceeding. The author states: "Its harmlessness does not seem to us so difficult to establish; it strongly recommends itself if, after ninety-eight punctures of the bladder, there is not a single accident to record. . . . In not one of them was found a trace of peritonitis, hæmorrhage, or infiltration of urine; some of them were operated upon two or three times in the twenty-four hours, and for many successive days, without ever experiencing the least morbid symptom."

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* A Treatise on the Pneumatic Aspiration of Morbid Fluids. By Dr. Georges Dieulafoy. Philadelphia: J. B. Lippincott & Co. Pp. 394.

Under these circumstances, puncture of the bladder can be resorted to much more frequently than formerly, and the bladder repeatedly emptied, while the operator proceeds at his leisure to remove the obstruction to the natural flow of urine. It should be performed, the author says, "whenever the first and the second attempt at catheterization, aided by the other usual means, has failed to overcome the obstacle. In cases of retention, both from enlarged prostate and from stricture, catheterization which could not be performed when the bladder was full was easy enough after the evacuation of the urine. It should, therefore, not be kept as a last resort, but should be employed early, rather than aggravate the cause of retention by repeated attempts to enter the bladder through the urethra. The spot chosen for the puncture is the same as that chosen for the supra-pubic puncture; that is, one or two centimetres above the pubes on the median line. Before performing the operation, it is important, as indeed in all cases in which this instrument is used, to assure one's self of the permeability of the needle about to be employed by passing through it a silver thread or a jet of water, as a few grains of rust or dust are liable to block up the opening. Needle No. 1 is the size generally used for this operation, being but one-third of a millimetre in diameter. This needle, attached to the tube of the aspirator, is inserted at the point above mentioned, and as soon as it has penetrated a short distance into the tissues the vacuum is established in it by opening communication with the body of the instrument. The needle is then pushed slowly forward until a jet of urine into the chamber of the aspirator announces the arrival of the point within the walls of the bladder; it must then be introduced a short distance farther, to prevent its being driven out by the contraction of the bladder. So trifling an affair is this operation that the patient can get up and walk about as readily as after simple catheterization.

The success which not only Dr. Dieulafoy, but also many other surgeons, both in this and other countries, have met with in employing aspiration for the relief of retention of urine, together with the advantages it possesses over other methods, are strong arguments in its favor. We believe, however, that one fatal case has been reported as occurring in one of the French hospitals. The needle, owing to certain peculiarities in its make, broke, after piercing the bladder, and a quantity of urine, flowing through the fragment transfixing the wall of the bladder, ran into the peritoneal cavity, causing inflammation and death.

Some cases of spina bifida are given, treated by aspiration, which appears to be a valuable aid in the treatment of this affection.

The treatment of strangulated hernia by aspiration has been pretty freely discussed in the medical journals for some time past, and in a former report we have alluded to cases of this kind. The chapter on this subject is little more than a *résumé* of what has already been given to the medical public. The object is to remove the liquids and gases which distend the intestine; these being, according to Dieulafoy, almost always the true obstacle to the reduction of strangulated hernia. The harmlessness of this puncture has, we think, from the number of cases on record, been abundantly proved. It is advised in all cases, except those of long duration where there is danger of gangrene or intestinal ulcerations, and ought to be performed as soon as the taxis, having been once methodically tried, has failed to afford good results. The plan of operating is essentially the same as that we have already described; the appearance of a thick, feculent liquid indicates that the intestine has been punctured. At the same moment, bubbles of air bursting forth on the surface of the liquid show that gases have escaped. The presence of this gas often diminishes the aspiratory power to such an extent that everything comes to a stand-still, and the instrument must be emptied and the vacuum reproduced in order to complete the operation. A more simple way of effecting the same object, and which, in a number of cases, might be placed in successful competition with the aspirator, is illustrated by a case reported in the *Chicago Medical Journal* for August. A large femoral hernia, three inches in diameter and five inches long, had been strangulated over twenty-four hours; taxis had failed, and an operation was abandoned on account of dangerous symptoms produced by chloroform. The hernia tumor was then punctured by an ordinary subcutaneous syringe, and eight and a half ounces of bloody serum, of a fæcal odor, was drawn off, after which the hernia reduced itself spontaneously. The fluid contents of the strangulated gut were considered by Dr. Knox, the writer of the article, to be largely transuded serum, the result of compression of the veins at the hernial ring. There might be, however, many cases where the fluid needed the persuasion of a vacuum to make its appearance.

The treatment of effusions into the knee-joint by aspiration is considered by the author to be perfectly harmless, his opinion being based upon one hundred and fifty harmless punctures. This confidence in the operation is not, however, shared fully by other French surgeons, who, moreover, are not inclined to admit its superiority as a method of treating this affection. A committee appointed by the Société de Chirurgie to investigate this subject reported that the new method possessed no advantages over the ordinary modes of treatment, and should only be used in those cases of chronic hydrarthrosis where the classical treatment had failed (*Gazette Hebdomadaire*, May 30, 1873). M. Dubreuil, in addition to his fatal case of aspiration for sanguineous effusion into the joint following fracture of the patella, reported, also, a case of death following puncture for the cure of chronic effusion. Add to this a fatal case reported by Dr. MacDonnell, of Dublin, a simple chronic hydrarthrosis resulting in death a week after puncture, and we have sufficient data to make this treatment at least unpopular, if it do not escape total condemnation. Nevertheless, we find that in one case puncture was performed without accident of any kind, thirty times, and cases are given where the patient is allowed to walk home immediately after the operation. The success of the author's treatment is thus described: "Experience has demonstrated that a certain number of large, painful hydrarthroses, of some days' standing, give way rapidly after one or two aspirations followed by compression. In other circumstances, the treatment lasts twelve or fifteen days, and in rare instances attains to three weeks." The author recommends an India-rubber or linen bandage to be applied to the joint, giving uniform and continuous pressure, the point selected for puncture being left exposed. This is usually the outer synovial cul-de-sac, at the level of the upper extremity of the patella and at about two centimetres outside that bone. The point of puncture may be sealed with collodion for precaution's sake, and firm pressure is then applied to the joint by thick wadding and bandages, and the leg should be kept in such a position as to have the foot slightly elevated. There are two striking points in the collection of cases given, namely, the apparent harmlessness of the treatment, and the rapidity of the cure.

Under the head of treatment of effusions into the cellular tissues, we find several cases of psoas abscess connected with disease of the vertebræ where aspiration was successfully employed. In those cases which we have seen, aspiration of any considerable amount of fluid has been impossible, owing to the blocking up of the instrument by the large amount of débris which these abscesses contain.

HÆMORRHAGE DURING OPERATIONS.

Prof. Esmarch, the well-known surgeon of Kiel, has given us in No. 58 of Volkmann's *Klinischer Vorträge*, an interesting account of his method of preventing hæmorrhage in operations upon the extremities. It consists in bandaging the limb with an elastic bandage, from its extremity to a convenient point above the part to be operated upon, sufficiently firm to empty it completely of the blood which it contains. Immediately above the portion which has thus been deprived of its blood, a tourniquet in the form of several turns of India-rubber tubing is applied, which effectually prevents any return of the blood to the emptied part, after the elastic bandage has been removed, and possesses a great advantage in being applicable to any portion of the extremity. The limb thus so effectually deprived of blood, enables the surgeon to operate as conveniently, as far as hæmorrhage is concerned, as upon the dead subject. The advantages of this proceeding are particularly well shown in a case of extensive necrosis of both tibiæ, of long standing, the operation for the removal of the sequestra being described at length. Both legs having been completely deprived of blood to a point just above the knee, where the rubber tubing is firmly applied, the dead portions of bone were simultaneously removed from both tibiæ by Dr. Esmarch and his assistant, without the loss of so much as a drop of blood, a matter of no small advantage to the patient, who, although much broken down by the disease, recovered rapidly from the effects of the operation.

This method can be employed in amputations and all other operations on the extremities, and also in operations upon the male genital organs. The surgeon is enabled not only to operate with greater facility and fewer assistants, but can also distinguish much more readily the diseased from the healthy parts.

Dr. Esmarch suggests that, in bloody operations upon the trunk, neck and head, the India-rubber tourniquet may be applied to all four extremities, which could then become reservoirs of blood to be drawn upon in case of excessive hæmorrhage. Although it might be thought that serious disturbances in the circulation and innervation of the limb might result, no accident of this kind has occurred in a large number of operations in which this method has been employed, although in some cases the blood was withheld for over one hour. It would not be advisable, however, to attempt this in parts infiltrated with foul pus, for fear of septic infection.

Professor Billroth has also operated in this way in a large number of cases, and appears much gratified with the result. Esmarch's method has, indeed, been pretty generally adopted throughout Germany, where, until the present time, but few attempts to prevent hæmorrhage in this way have been made. As long ago as 1853, Langenbeck was in the habit of bandaging the limb with an ordinary roller bandage, and applying the tourniquet previous to amputation ; but later, he has abandoned it, and of late years it has been the almost universal custom in Germany, as in many other countries of Europe, to apply merely digital compression to the artery in amputations. Previous to Esmarch's attempts, the elastic bandage had never been used for such a purpose. We are somewhat surprised at the amount of comments which this article has excited, for we had supposed this method of saving blood had been much more extensively employed than it seems to have been. It has been the custom at the Massachusetts General Hospital, for over twenty years, to apply a roller bandage firmly to the limb, from the tip of the foot up to the tourniquet, previous to an amputation, when it was desirable to economize blood. An ordinary linen or cotton bandage has answered the purpose quite as well as Prof. Esmarch's elastic bandage, and has the advantages of being always obtainable and much cheaper. The use of the bandage applied in this way has not been confined to amputation, but has been used in operating for necrosis, in resections, in exploratory incisions, both in the arm and leg. In place of the India-rubber tubing we have the metallic hospital-tourniquet, by far the most durable and convenient instrument of the kind we have seen. The method has, however, been, of late years, confined chiefly to amputations. Much the same plan has been advised by Erichsen, and we are inclined to think that it has been much more extensively resorted to, both in this country and in England, than has been supposed.

Prof. Verneuil, also, has busied himself of late, in attempts to reduce hæmorrhage to a minimum in certain operations. He has devised a new method of amputation, calculated, he thinks, to do away with arterial compression, whether by fingers or tourniquet, which he considers an exciting cause of phlebitis and sloughing of the integument from pressure, especially in patients who are fat. The portion to be amputated is treated very much as a tumor would be. When antero-posterior flaps are formed, a common bistoury is all that is required for incising the soft parts, which are divided in successive layers, the bloodvessels being tied as they are met with and before being divided. Veins, as well as arteries, are closed with ligatures. The bone is divided as in the usual methods. When the principal bloodvessels are so situated that they can be included in one of the flaps, it is the practice with Prof. Verneuil to divide the bone before forming this flap. Twenty-one cases are reported as having been operated upon by him in this manner, viz.: Eight disarticulations at the shoulder, three amputations of the thigh, two amputations of the arm, six amputations of the leg, and two coxo-femoral disarticulations. He recommends this method as having the advantages:—1. Of enabling the surgeon to operate with fewer assistants; 2. The avoidance of hæmorrhage; 3. Obviating the risk of phlebitis from pressure necessary to control hæmorrhage (*Gazette Médicale de Paris*). We can conceive of this method being of advantage when the surgeon has no skilled assistance at hand, but in no other case could the advantages offset the tediousness and bungling character of such an operation, which, moreover, would be likely to leave a jagged and unsurgical wound in the stump.

Professor Verneuil claims also to have devised a method for preventing the entrance of blood into the buccal cavity during resections of the maxillary bones, thereby doing away with the necessity for performing tracheotomy to prevent hæmorrhage into the trachea. The important point in this method consists in reserving the incisions of the mucous membrane of the buccal cavity until the last moment. A large tumor, of the size of two fists, growing from the horizontal ramus of the inferior maxilla, was removed in this way. An incision having been made along the inferior border of the bone, the tumor was thoroughly exposed by dissecting up the anterior and posterior flaps, the mucous membrane being left intact. Two small apertures were then made in the mucous membrane, at the anterior and posterior extremities of the diseased bone, and a chain saw having been introduced at these points, the bone was resected. The écraseur then separated the tumor from the base of the tongue, the chain being introduced through the holes made for resecting the bone. This left the growth hanging from the cheek by the anterior fold of mucous membrane, the division of which completed the operation.

In resecting the superior maxilla, M. Verneuil makes a V-shaped cut through the outer integument, the apex of which is near the ala of the nose, while the branches include the borders of the malar bone. This flap is reflected, and before dividing the bone at any point, the nasal fossa of the corresponding side is plugged. The malar bone and the ascending branch of the maxillary bone are next divided by bone forceps. The palatine portion is then divided by powerful bone forceps, and the final step in the operation is to separate the hard from the soft palate. In this way, hæmorrhage into the buccal cavity is prevented until the last stages of the operation.

A case of amputation without hæmorrhage is reported in the *American Journal of the Medical Sciences*, by Dr. E. P. Sale, where nature provided against bleeding in her own way. The patient, while chopping wood, nearly cut off his foot at the tarso-metatarsal articulation. He suffered so much from shock and hæmorrhage that amputation was postponed a week, when the part of the foot beyond the wound became gangrenous. Amputation was performed just above the ankle; no hæmorrhage followed the operation. The patient recovered without an unfavorable symptom. It was accounted for by thrombosis of the various arteries, brought on "by anæmia, which rendered the blood hyperinotic, as in the formation of heart-clot after a profuse post-partum hæmorrhage."

Bibliographical Notices.

Du Traitement des Rétrécissements de l'Urèthre par la Dilatation progressive. Par T. B. Curtis, Docteur en Médecine de la Faculté de Paris, etc. etc.

This work, to which was awarded the Civiale prize for 1872, is likely to be of great benefit in recalling to the profession the value and importance of the treatment of stricture by gradual dilatation. In the introduction, the author disclaims any attempt to decry urethrotomy, a proper operation in certain cases; he only intends to describe, minutely and at length, the method of progressive dilatation. Progressive dilatation of strictures is effected by the introduction of proper bougies or sounds of a regularly increasing calibre. In the introduction of any instrument into the urethra, we have to consider whether it shall be withdrawn at once or allowed to remain a longer or shorter time. The method of treating a stricture, by passing a bougie and at once withdrawing it, and at the next sitting passing a larger one, and so on, is called *dilatation temporaire*, or *interrupted dilatation*. The method of treating a stricture by allowing a bougie to remain several days, more or less, in the urethra, and then replacing it by a larger one, is called *dilatation permanente*, or *continued dilatation*. The author does not mean to include in his subject the treatment of strictures by *sudden* dilatation, whether after the method of Perrève, Holt, Voillemier, or Thompson. All of these methods belong to the treatment by *violence*, and not *gentleness*.

Chapter II. contains an interesting historical account of the treatment of stricture. The instruments for the interrupted dilatation, or occasional dilatation *(dilatation temporaire)*, are bougies with a conical end, terminating in a small, olive-shaped bulb. The rules for proceeding to dilate a stricture are given very minutely and carefully, and will well repay perusal and observance. In the continued dilatation *(dilatation permanente)*, the instruments used must be of good manufacture, in order to withstand the corrosive action of the urine. The method of retaining the instrument in the urethra, by tying it to the hairs of the pubes, is described and figured. This method is very convenient, and was employed by the writer of this review more than twelve years ago. The instrument should not be passed into the bladder, on account of the vesical irritation it might cause. During the treatment by continued dilatation *(dilatation permanente)*, the patient will keep his chamber, if not his bed. When the urethra will admit a bougie of the calibre of No. 12 or 14 of the French scale, continued dilatation can be omitted, and the interrupted or occasional substituted. The theories of the action of bougies are discussed in Chap. V. In Chap. VI., is a detailed enumeration of the symptoms, serious and slight, that dilatation may cause. The author considers occasional dilatation *(dilatation temporaire)* as the best method of treating all simple cases of stricture.

In the last chapter, the indications for and against the methods of dilatation are considered, and the history and treatment of four cases are given at length. The work closes with a table of seventy cases of stricture, treated at the Necker Hospital; the age of the patients, the mode of treatment, and the calibre of the urethra at the beginning and end of treatment, are given. This table is interesting and valuable. On the whole, this prize essay by Dr. Curtis will commend itself very favorably to the profession.

Transactions of the Medical Society of New Jersey, for the year 1872. 8vo. Newark: 1872. pp. 310.

The 106th annual session of the State Medical Society of New Jersey was held at Paterson. The President, Charles Hasbrouck, M.D, delivered the annual address, his topic being the personal relations of the profession to quackery. He showed that, in consequence of the traditional prejudices of medical men against the popularizing of medical knowledge, we are ourselves to be regarded as responsible in a measure for the existence and success of homœopathy, Thompsonianism, and other forms of quackery. The popular ignorance of which Dr. Hasbrouck complains, and which tends to the promotion of quackery, is not so much the want of a thorough acquaintance with the principles of medicine as a science, and its details as an art, but the absolute and profound ignorance of everything relating to medicine; ignorance, not only of what is known, but ignorance, also, of the fact that there is much in medicine that is not known. A familiarity with a few of the leading general principles of our art would enable the public to discriminate intelligently between the educated and conscientious physician and the irregular and pretentious charlatan. The address forms a carefully-prepared, able paper, which we would recommend to the attention of the general reader as well as to physicians.

Medical men interested in the history of the Hunterdon District Society, will find that subject exhaustively treated in 123 pages of this volume, in the course of which the lives of many of the deceased local celebrities of that section are minutely detailed, the epitaphs on their tomb-stones being introduced as far as practicable.

Dr. G. H. Harrison read a paper on the "Diseases prevalent in the Valley of the Delaware." We are at a loss to determine why this paper should be pretentiously called an "Essay," a term which is commonly employed to designate the thoughts of a writer on any given subject, but in elucidation of some theory or doctrine. If the barren description of the prevalent diseases of any locality can be called an essay, the term might with equal propriety be applied to Worcester's Dictionary.

The remainder of the volume is made up of the reports of the various standing committees, cn the health of the different counties, interspersed with the history of several cases of more than ordinary interest.

BOOKS AND PAMPHLETS RECEIVED.

Nature Series. Origin and Metamorphoses of Insects. By Sir John Lubbock. London: Macmillan & Co. 1874. Pp. 108.

Transactions of the New Hampshire Medical Society. 1873. Pp. 120.

A Handbook of the Theory and Practice of Medicine. By Frederic T. Roberts, M.D., M.R.C.P. Philadelphia: Lindsay & Blakiston. 1874. Pp. 1052. (For sale by James Campbell & Son.)

Boston Medical and Surgical Journal.

BOSTON: THURSDAY, DECEMBER 18, 1873.

OF the many distinguished men who have passed away during the year now at its close, the greatest has been reserved for the last. LOUIS JOHN RUDOLPH AGASSIZ expired at Cambridge, after a short illness, on the evening of Sunday, December 14th, in his sixty-seventh year. Though many equally distinguished remain, there is probably no one who has been familiarly known in so many countries, and whose death will be so universally deplored throughout the civilized world. Agassiz was born in 1807, in Switzerland, in the parish of Mottier, between the lakes of Neuchâtel and Morat. During his boyhood, he was remarkable for scholastic learning as well as for the study of plants and animals. When only seventeen, he began at Zurich the study of medicine, which he pursued at Heidelberg and at Munich, where, in 1831, he obtained the degree of M.D. His life as a medical student appears to have been protracted by the interest he took in kindred branches of science, and particularly by the time given to assist Martius in the ichthyological part of his work on Brazil, and later, to write his own work on the "Natural History of the Fresh-Water Fishes of Europe." In 1832, he was appointed Professor of Natural History at Neuchâtel, where he remained fourteen years, with the exception of the time given to some journeys. It was here that he conceived and elaborated the idea of the "glacial theory," with which his name will be forever associated. He came to America in 1846, when in the prime of life, with a large stock of experience, and with his abilities fully developed, while his force and enthusiasm were unabated,—the latter, indeed, only left him with life. The business on which he came being despatched, he decided to remain, influenced chiefly by the offers of Professor Bache, of the Coast Survey, which enabled him to study the marine fauna all along the shore. The next year saw the foundation of the Lawrence Scientific School, at Cambridge, where, having accepted the Professorship of Zoölogy and Geology, Agassiz made his home for the future. Since then, his life has been one of constant study and of work at its great object, the Museum of Comparative Zoölogy, which, though yet in its infancy, is already a noble monument to his memory. His most important journeys have been that up the Amazon some eight years ago, and the "Hassler Expedition" in 1871-2. The opening, last summer, of the School of Natural History at Penikese is too fresh in the minds of all, to need more than a passing allusion.

Professor Agassiz has of late been prominent for his steadfast opposition to the Darwinian hypothesis. This is not the place for any discussion of the theory, but even his opponents must admit that to face the general, reckless enthusiasm with which the theory has been received in this country, to maintain that the evidence advanced was not only insufficient, but unfounded, was the part of a bold and able man. His course could not fail to be offensive to many, especially to those with minds of such peculiar precocity, that when scarcely beyond boyhood, they are certain that one of the most intricate theories ever advanced does not admit of a moment's question. The coming number of the *Atlantic Monthly* will contain the first, and unfortunately the last, of a series of papers in which the Professor meant to define and maintain his position in this controversy. Professor Agassiz was celebrated for his amiability and charming personal qualities, which he possessed to a degree which is rarely joined to such indefatigable perseverance and steadfastness of purpose as his. Unsparing of himself in his work, he was an exacting leader, but a sympathetic and encouraging instructor. His death leaves a place vacant in the scientific world and in the community, which it will be difficult to fill.

CANUET, MOUTARD-MARTIN, AND OTHERS ON THE TREATMENT OF ASTHMA BY BATHS OF COMPRESSED AIR.*—A paper was read by M. Canuet, at a recent meeting of the Therapeutical Society of Paris, on a case of humid asthma of eighteen years' standing, and due to a severe double broncho-pneumonia, which was cured by means of the compressed air-bath, and the paper was followed by an interesting discussion. [This plan of treatment of certain respiratory diseases has an obviously scientific basis, if properly studied and applied, but, so far as we know, has been little if at all tested by practice in this country.—ED. M. R.] At first the fits occurred at irregular intervals, as much as six months sometimes elapsing between them. The spasmodic character of the fit was well marked, and after several days of severe spasm this would give place to severe catarrh. After about ten days, the attack passed away, the respiration became normal, and there remained only a little grey morning expectoration. The catarrh gradually increased, and great benefit was derived from two visits to the waters of Cauterets. Eight years from the development of the malady, the catarrhal susceptibility became extreme, and every month there were one or two attacks, generally lasting ten days. The patient now was troubled with flatulent dyspepsia, and became very anæmic. A third visit to Cauterets, and subsequently one to Eaux Bonnes, were alike unproductive of relief. It was observed that, as the malady became chronic, the spasmodic element became less predominant, and that, too, before the administration of such remedies as arsenic and the iodide and bromide of potassium.

It was under these conditions that the compressed air-baths were first tried in October, 1871, under the direction of M. Leval-Piquechef. During the first trial, with a pressure of 7 centimetres (3·36 inches) of mercury, the pulse ranged from 72 to 80, and the respirations were 18 in the minute. Gradually, the bath being taken daily, the respirations diminished; and at the twelfth sitting, under a pressure of 7 centimetres, they had fallen to 9. The appetite and strength improved. During the treatment, the attacks that did occur were milder.

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* Gazette Médicale de Paris, May, 1873.

At the thirtieth sitting, with a pressure of 15 centimetres, the pulse fell to 68, and the respirations to 6. In ordinary air the numbers were 76 and 18. After three series of thirty baths each, ninety in all, the general state was very satisfactory; appetite and sleep returned. Considerable atmospheric variations, cold and thaw following, were passed through without annoyance; a little bronchial expectoration in the morning being the only remnant of the asthma.

With respect to the mode of operation of the compressed air, it is hardly probable that the good was done by mere mechanical pressure of the air, which rarely was 20 centimetres over what is normal. It seems that we look to the oxygen as the active curative agent. Increased supply of oxygen, without increase of atmospheric pressure, has proved beneficial in the spasmodic complications of anæmia and chlorosis.

Placing patients in a bell-chamber was observed to overcome the paroxysms of whooping cough when the disease was in its decline.

In the description in the paper, M. Martineau mentioned the success of the compressed air-bath in simple uncomplicated chlorosis obtained by M. Journadet.

The Hospitals.

MASSACHUSETTS GENERAL HOSPITAL.

(Saturday, December 6, 1873.)

OPERATIONS were performed in the following cases:—Abscess of Gluteal Region, Fistula in Ano, Tumor of Leg, Gun-shot Wound of Hand, Harelip, Fistula of Thigh and Groin.

Abscess—in an adult. One year ago, while shoveling, the patient sprained his hip, and had suffered pain and tenderness at a point corresponding with the sacro-iliac synchondrosis. There is, now, swelling and deep fluctuation at the point described. Dr. Bigelow punctured the most prominent part with a trocar, and then freely laid open a cavity, two inches from the surface, by a T incision through the overlying integument and gluteus muscle, evacuating about three ounces of pus. The finger reached a small aperture, which passed within the pelvis near the sciatic ligament.

Fistula—in a man, and quite superficial. Dr. Cabot passed a probe into it, dissected out the fistulous tract, and united with stitches the wound thus made.

Myxo-sarcomatous Tumor of Leg.—The patient was a man of about 50 years. Eight months ago, he bruised his leg, and a growth, of the size of a pea, soon after appeared at the contused point. This increased slowly, with some pain, until September last, since when it has rapidly grown to its present size. Within a week, ulceration had commenced, which, on Thursday, was the seat of hæmorrhage to the amount of a pint. The tumor, situated on the middle of the inner side of the right leg, was prominent and almost spherical, of the size of an orange, nodulated upon its surface, very elastic and firmly attached at its base, involving an apparently enlarged saphenous vein, which was indurated above and below the growth, and, as Dr.

Bigelow remarked, considering the varicose condition of the other leg, it suggested a tumor originating in varix and mainly composed of coagula. As usual, the leg was bandaged from toe to hip, the tourniquet applied and the bandage removed. A straight incision of five inches was made, turning out a good deal of coagulum. The operator then readily detached, with the finger, from its bed in the muscles, an opaque, soft, sarcomatous tumor, and subsequently dissected from the adjoining skin and intermuscular spaces, an almost equal amount of myxomatous, slimy, jelly-like material, the convoluted outline of which, following the muscular interstices, had resembled, as above stated, inflamed varicose veins, although it proved to be transformed connective tissue. Immediate microscopical examination of the growth confirmed its myxomatous character. The disease, though carefully removed, would, Dr. Bigelow stated, be very sure to return locally.

Gun-shot Wound of Hand.—A young adult had been wounded in the palm of the hand with a buck-shot fired from a pistol. Prolonged search, by Dr. Cabot, failed to discover the foreign body. A counter opening was made at the wrist, to ensure adequate drainage of pus.

Hare-lip—in a baby. This was single, complicated with cleft palate, and extended into the nostril. Dr. Bigelow operated by the method described in a previous report,* and afterwards placed upon the cheeks, to prevent their retraction, an hour-glass shaped adhesive plaster united across the lip by a long and very narrow band. The hardened lymph accumulates under this band, and, pressing upon the cicatrix, generally requires its renewal on the third day, to prevent ulceration. Union depends largely on the plastic power of the subject, and, in case of failure, the child should be sent home, to return when in better health.

Sinuses of Thigh and Groin.—The result of an old abscess. These were thoroughly explored by Dr. Cabot, but found to be unconnected with bone.

H. H. A. BEACH.

BOSTON CITY HOSPITAL.

LAST Friday, December 12, operations were performed as follows:—

Dr. Thorndike excised an Epithelial Cancer from the lower lip of a man sixty years old. The patient had for many years used a clay pipe in smoking. The disease began ten years ago as a warty growth, and had developed until two-thirds of the lip had become involved. The diseased part was removed by a V-shaped incision.

To restore the lip, after this extensive loss of substance, Dr. Thorndike performed a plastic operation as follows. He made an incision through the skin and muscles of the cheek, extending, from the angle of the mouth, two inches, directly backward; thence the cut was carried at a right angle, downward, one inch. The incision divided the tissues of the cheek down upon, but not through, the buccal mucous membrane; from the inner surface of the upper flap of the cheek, this mucous membrane was dissected to a third of an inch in width, and was then divided, thus forming a part of the lower flap. The lip was dissected from the lower jaw sufficiently to allow of easy adaptation of the parts, and the two arms of the V-shaped wound were apposed and held in place by silver-wire sutures passed deeply. The long incision in the cheek became by this means a part of the lower lip, whose mucous covering was supplied by the membrane dissected from the cheek. The operation was completed by adjusting the edges of the wound with silk sutures, and by stitching the fold of mucous membrane to the outer margin of the new lip.

Dr. Thorndike remarked that this operation not only restored the shape of the mouth very perfectly, but gave a chance for healing without tension on the parts.

A Secondary Growth of Scirrhous Tumor of the Breast was removed by

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* JOURNAL, Nov. 6, 1873. Page 463.

Dr. Thorndike. The last operation was performed a year ago. Soon after the wound healed, the disease returned in the upper part of the cicatrix and had developed until, at present, a movable growth of the size of a large orange involved the tendon of the pectoralis major muscle. No glands in the axilla showed the invasion of the disease, and the internal organs appeared to be healthy.

On Tuesday, December 9, Dr. Cheever performed, before the medical class, the operation of Tenotomy of the Hamstring Tendons. The patient was a girl, twenty-five years old, who had, on the right side, talipes varus and contraction of the knee; on the left, talipes valgus, which was relieved by apparatus. Dr. Cheever proposed to treat the knee first, and afterwards to cut the tendons which were involved in the varus. The tendons of the biceps, semi-membranosus and semi-tendinosus were divided. Extension by weight was to be applied on the fourth day.

Dr. Cheever amputated the last phalanx of a finger affected with Onychia Maligna, of several years' duration. He remarked that removal of the whole diseased tissue, including the matrix, down to the periosteum, was sometimes successful. In the case of this laboring man, amputation was the speediest and surest.

Perineal Section was performed in a case of Rupture of the Urethra, with Extravasation of Urine. A boy, fifteen years old, fell on his perineum on the evening of the 7th, two days ago. The patient now presents a distended bladder, with great œdema of the penis, scrotum and perineum. A large, black slough covers the perineum. The thighs and abdomen are a little infiltrated. A few punctures in the œdematous prepuce gave exit to a fluid smelling like urine.

Dr. Cheever slit up the prepuce, and tried several catheters in the urethra. None passed beyond the bulbous portion. A large incision was carried down the middle line of the perineum, from the scrotum to the sphincter ani. The point of an elastic bougie in the urethra was immediately felt and brought out of the wound. The cavity under the arch of the pubes was filled with clots and sloughs. A careful dissection reached the membranous urethra, the knife being pushed in under the pubes, guided by the finger in the rectum. A great quantity of clear urine was drawn off, and a large elastic catheter, carried through the perineum, was fastened in the bladder. Free incisions were made in the scrotum and penis.

Correspondence.

ANÆSTHESIA IN EUROPE.

Messrs. Editors,—At the present juncture, when the relative merits of ether and chloroform as anæsthetic agents are being widely discussed, it may be somewhat interesting to notice certain equivocal points connected with the theory and practice of chloroformization, and particularly to call attention to the manifold contradictions with which the whole subject of anæsthesia is beset in standard European works. Among those who practise and uphold etherization, great unanimity may be said to exist on all important points; the laws of etherization as set forth by Prof. H. J. Bigelow (Boston Med. and Surg. Journal, Nov. 20, 1873) form a code of clear, simple rules, easy to understand and to follow, and from which few will dissent. With chloroform, the case is very different; a few leading examples, taken almost at hazard, and representing the best contemporary practice in England and France, will show immediately how little agreement exists on such all-important points as the degree of safety of the use of chloroform, the nature and mode of action of the dangerous properties which even its advocates almost universally admit it to possess, the counter-indications to its use, the premonitory signs of danger and the efficacy of restorative measures in case of accident. It is evident that such equivocal testimony and divergent opinions as we shall have occasion to record must point to a degree of uncertainty and insecurity attending the use of chloroform which contrasts very unfavorably with the simplicity of the theory and practice of etherization.

As regards anæsthesia, European surgeons may be pretty fairly divided into two classes: those who have never yet met with a death from chloroform, and those, less numerous, whose practice has not been equally fortunate. The first are naturally *optimists;* they take a very confident view of the innocuity of chloroform, which they say is "free from danger if properly used" (Lister, in Holmes' System of Surgery, vol. v. p. 496), and preferable to ether on the grounds of less odor and bulk, and greater power. With those who take this sanguine view, hardly any counter-indications to anæsthesia can be said to exist: cardiac disease, for instance, is held rather to indicate, than debar from, the use of chloroform (Syme, Lister); the same is true of collapse following severe injury and gun-shot wounds (Lister, Longmore in Holmes's Surgery, vol. ii. p. 244). Should danger impend, it may be recognized in time, some say by the state of the pulse, others by the respiration, and forestalled by simple and efficient measures, so that a fatal result must be due to carelessness or inexperience.

Those, on the other hand, who have once experienced the shock of seeing a patient pass under their hands from sleep into death, take a wholly different view; they are *pessimists*, not only as regards chloroform, but all anæsthesia. They fully admit the noxious qualities of chloroform, which may be manifested in a variety of ways, and at all stages of anæsthetic action; the fatal accident is generally supposed to take the form of *syncope*, due to direct myo-paralysis of the heart (Snow on Chloroform, &c., Gosselin, *Clin. Chir.* p. 22), or to paralysis of the medulla oblongata (Lallemand and Perrin, Gosselin, Guyon), or to some as yet incomprehensible agency (Giraldès, *Dict. de Méd. et de Chir. Prat.*, vol. ii. p. 247); others attribute the fatal result to *asphyxia*, caused by centric paralysis (Gosselin, Lister), or by laryngeal spasm (Devergie, Black), or by falling back of the tongue (Hergott, and many others). Besides all these noxious modes of action, which are more or less dependent on an *over-dose* of the drug, and which can be at least understood, if not foreseen and even sometimes forestalled, the advocates of chloroform are obliged to admit the existence of other rarer forms of fatal toxic action, as the "congestive form" of Gosselin (*loc. cit.*, p. 24), in which neither syncope nor asphyxia are recognizable, or that inscrutable form of sideration which depends for its manifestation on the so-called "*chloroformic idiosyncrasy*" of Robert (Lister, Gosselin, Guyon); this unfortunate predisposition to sudden death under chloroform offers no sign by which its existence may be even suspected; it is invoked in order to account for cases where chloroform kills suddenly, without warning, and irrespectively of the dose inhaled, often in trivial cases, where only partial anæsthesia had been attempted (see Lister, *loc. cit.*, p. 485, Giraldès, *loc. cit.*, p. 248). To complete this long list of death-producing agencies, we venture to suggest that asphyxia by suffocation (according to the mechanism set forth by Dr. Bigelow in his comments on Dr. Lake's case) be added, as likely to have been possibly overlooked in some cases of supposed chloroform poisoning.

Is the peril in any known proportion to the amount of chloroform inhaled? According to some authors (Giraldès, p. 244) in the majority of fatal cases, the dose had been very small, often, apparently, insignificant, and certainly quite insufficient to procure the benefits of anæsthesia (fifteen drops, a coffee spoonful). Lister, however, says that except for those rare cases of death which we must attribute to the "chloroformic idiosyncrasy," "the explanation must be found in an over-dose of this potent narcotic from too long-continued administration" (*loc. cit.*, p. 488). He, nevertheless, admits that in a considerable proportion of cases "death has taken place suddenly, at the commencement of an operation with imperfect administration of chloroform, which stands to the fatal event in the relation of an accident concomitant (?) or rather a preventive insufficiently used" (p. 484). What conclusion can we allowably come to from these conflicting statements? Should the chloroformist aim at producing the full narcotic and anæsthetic action of chloroform, or is it safe for him to limit himself strictly to the production of insensibility to pain?

Such manifold perils being admitted to exist, the pessimist is naturally led to recognize numerous *counter-indications* to the exhibition of chloroform; cardiac disease, which the more fortunate Lister considers to be rather an indication than otherwise, is with him the first among the counter-indications (Gosselin, Guyon, Giraldès); others are chronic alcoholism (Nélaton, Guyon, Gosselin); debility consequent on hæmorrhage or anterior disease (Gosselin, Giraldès); intense mental excitement at the moment of injury (Giraldès); collapse following severe injury, or even the unapparent shock, produced by a simple dislocation (Gosselin, *loc. cit.*, p. 18). By strict obedience to these many counter-indications (our knowledge of which is still incomplete, says Prof. Gosselin), the perils of anæsthesia by chloroform may, to a certain extent, be avoided; but, even though these numerous restrictions to anæsthesia be complied with, the chloroformic idiosyncrasy may yet make itself apparent by the sudden death of the patient, however satisfactory a subject he may have appeared before being put to the test.

How may the approach of danger be recognized, in cases where death does not occur altogether without warning? By attentively watching the pulse, say the majority. Not so, say Lister and Sédillot, the pulse ought rather to be disregarded, in order that undivided attention may be given to the state of the respiration.

It certainly seems strange to us that our European contemporaries should still be willing to accept the well-known dangers of chloroform, or else deprive their patients of the benefits of anæsthesia, rather than take the trouble to give ether a *trial*. One reason of this inertness is doubtless the fact that the majority of surgeons go through a life-time of busy practice without meeting with one disastrous case; they remain extremists, satisfied with chloroform and with themselves, and seeing no reason to change their practice. The unfortunate pessimist, on the other hand, goes on with chloroform through *vis inertiæ;* he either seeks every pretext to withhold anæsthesia, or else he uses it in a timid, ineffectual manner, operating anxiously on half-conscious patients, and even then fearful of exposing himself by incomplete administration to the very danger he seeks to avoid; that this is no exaggeration, anyone who is familiar with the practice in foreign hospitals can testify. "Why not try ether?" we would say to these sadder, but not wiser men; but they shake their heads at the proposal; to them all anæsthesia has lost its charms; ether, they say, causes fewer deaths only because less frequently given (Guyon), or because less potent (Lister), or else, to support their distrust, they point to cases of death during etherization like that of Dr. Lake, lately so thoroughly disposed of by Prof. Bigelow.

From this short survey of the mental state of the profession in Europe with regard to anæsthetics, we have cause to fear that it may be useless to look to our professional brethren for any initiative of change for the better; no movement in favor of ether can be expected to take place until the necessity thereof is felt and enforced upon the profession by the public at large. With this end in view, it may be hoped that such cases as that of Mrs. Crie, with all the attendant publicity, may not have occurred in vain.

T. B. CURTIS, M.D.

NEW ORLEANS, LA.; November 16, 1873.

MESSRS. EDITORS,—In my letter of the 14th, I recorded some experiments upon the action of black vomit of yellow fever upon living animals, which led to the conclusion that the absorption of black vomit, after it had undergone putrefactive changes in the stomach of the yellow fever patient, might be the cause of death in this disease; and I was led by these results to employ the sulpho-carbolate of lime.

The following case, which was the first in which I used this remedy, presents many points of interest.

D. P., native of Italy; aged 18; has resided in New Orleans six years; residence, St. Anne St., near Levee; had a slight chill, followed by fever, October 14th, 1873; entered Charity Hospital October 16th, 4½, P.M., with hot skin and rapid pulse. Breath offensive; face red; great capillary congestion generally. Conjunctiva of eyes congested and yellow. Body emits an offensive smell. Tongue red at edges and tip, and coated with yellow fur in centre; gums red. Patient complains of some pain in head, lumbar region and extremities.

8 o'clock, P.M.—Pulse 106; respiration 28; temperature of axilla 104°. ℞. Potassii bromidi, ʒij.; Liquoris ammoniæ acetatis, f℥iv. Tablespoonful every four hours.

October 17th, 8, A.M.—Patient restless. Complains of intense pain in the head and extremities, back and epigastrium; also of nausea. Has passed no urine since entering the hospital; when the catheter was introduced, only one fluid ounce was drawn off, which was found to be loaded with albumen and bile. For the relief of the nausea, an ice-bag was ordered to be placed upon the epigastrium; for the relief of the suppression of urine, ice-cold water was thrown up the rectum in large quantities. The injections of ice-water had the desired effect, and caused the excretion and evacuation of a considerable amount of urine, which was heavily loaded with albumen.

In order to prevent septic changes in the black vomit, if it should be formed, I ordered the following:—

℞. Sodii sulpho-carbolatis, ʒi.

Divide into three powders. One powder, dissolved in a wineglassful of water, every three hours.

Small quantities of brandy, largely diluted with water, water charged with carbonic acid gas, and iced milk at regular intervals. Fragments of ice to be held in the mouth.

8½, A.M.—Pulse 100; respiration 28; temperature of axilla, 106·5°.

8 o'clock, P.M.—Condition unchanged. Jaundice, capillary congestion, nausea and restlessness increasing; urinary excretion scanty; pulse 98; respiration 26; temperature of axilla 104·1°. Urine contains albumen and casts. *Treatment.*—Continue ice-bag to epigastrium; ice-water enema; and sodium sulpho-carbolate, twenty grains every three hours.

October 18th, at 4 o'clock, A.M., the patient commenced to throw up black vomit, and continued to do so at short intervals, quite freely, until 8½, A.M. The sulpho-carbolate of sodium appears to have exerted some beneficial influence, as the black vomit is of a brighter color than usual, and contains coagula of blood.

8 o'clock, A.M.—Pulse 82; respiration 28; temperature of axilla 102·1°; gums red; tip and edges of tongue very red; centre and body of tongue coated with yellow and brownish-yellow fur; blood oozes from tongue and gums. A small quantity of urine, about half fluidounce, has been drawn off by the catheter, which was found to be highly albuminous. Patient delirious and very restless. A stout, strong man was directed to sit by his bed, and to keep him quiet and prevent him from getting out of bed.

℞. Sodii sulpho-carbolatis, ʒij.; divide into six powders; one powder every three hours. Inject ice-cold water, at intervals of four hours, into the rectum, until the kidneys act freely; apply ice-bag to epigastrium; apply sinapism to back of neck and lumbar region. Administer, at regular intervals, alternately, small quantities of brandy largely diluted with water charged with carbonic acid, and iced milk.

The brandy and carbonic-acid water appeared to increase the nausea and vomiting, and were accordingly discontinued; the sodium sulpho-carbolate, on the other hand, appeared to quiet the stomach, and, during the course of the day, the black vomit ceased, and the patient enjoyed several hours of refreshing sleep. These results appeared also to be due to the local application of ice to the epigastrium, and the injections of iced water not only controlled the nausea and excited the kidneys to action, but also reduced the high temperature.

6 o'clock, P.M.—Pulse 80; respiration 24; temperature of axilla 102°; patient in much the same condition, but not so restless; the injections of ice-cold water were followed by a pretty free excretion of high-colored and albuminous urine. Black vomit has ceased, but nausea still continues.

October 19th.—Condition of patient still alarming; great congestion of capillaries; the face presents a deep mottled purplish appearance; hæmorrhage from tongue and gums. No return of black vomit. Kidneys excreting urine more freely. Pulse 94; respiration 24; temperature of axilla 100°.

Continue sodium sulpho-carbonate, 20 grains every 3 hours.

7 o'clock, P.M.—Patient improving; intellect clear; capillary congestion less; jaundice not so marked; pulse 76; respiration 20; temperature of axilla 100·5°. Continue sulpho-carbolate of sodium. Up to the present time, the nourishment of the patient has been confined chiefly to iced milk.

Oct. 20th, 8 o'clock, A.M.—Pulse 68; respiration 18; temperature of axilla 99·5°. Patient decidedly better; no nausea; urine excreted in sufficient amount; capillary congestion and jaundice disappearing.

Continue sulpho-carbolate of sodium, 20 grains every 4 hours; iced milk in small quantity, and brandy diluted with carbonic acid water, at regular intervals.

October 23d, 8 A.M.—Cheerful; sitting up in bed; bright expression of eyes and countenance; complexion clear; complains of nothing but hunger; Pulse 62; respiration 20; temperature of axilla 98.9°.

The restoration to complete health in this case was rapid and continuous.

The relations of the pulse, respiration and temperature, will be illustrated by the following table :—

DATE.	PULSE.		RESPIRATION.		TEMPERATURE OF AXILLA.		REMARKS.
	Morn. 8, A.M.	Eve. 8, P.M.	Morn. 8, A.M.	Eve. 8, P.M.	Morn. 8, A.M.	Eve. 8, P.M.	
1883							
Oct. 16		106		28		104°	Great capillary congestion. Nausea.
17	100	98	28	26	106·5°	104·1°	Suppression of urine. Jaundice.
18	82	80	28	24	102·1°	102°	Black vomit. Delirium. Urine Suppressed.
19	94	76	24	20	100°	100·5°	Cessation of black vomit.
20	68	70	18	18	99 5°	100·1°	Kidneys acting. Symptoms not so grave.
21	66	64	20	22	100°	100°	Decided improvement.
22	62	60	20	19	99°	99·8°	Patient improving.
23	62	63	20	24	98·9°	99 9°	

Careful records of the cases of yellow fever, treated in my wards in the Charity Hospital, were prepared, but it would extend this letter to too great length to report them in detail, and that given will serve the double purpose to illustrate the nature of the epidemic of 1873, and at the same time to exhibit the main features of my method of treatment.

I regard the ice-water injections and the careful regulation of the diet, and the preservation strictly of the recumbent position, as fully of as great importance as the administration of the sulpho-carbolate of sodium.

The sulpho-carbolate of sodium does not irritate the stomach and bowels in yellow fever, and does not damage the nervous system.

Much will be gained in the treatment of yellow fever, if it were possible to convince the medical profession of the importance of abandoning all useless and heroic medication.

Whilst 200 deaths have been officially reported in 368 cases of yellow fever, in my hospital practice, if those patients be excluded which were brought into my wards *in articulo mortis*, the mortality has amounted to not more than 5 per cent., or one death in 20 cases. Respectfully,

JOSEPH JONES, M.D.

Medical Miscellany.

THE inquest in the case of Mrs. Homan, who died at Lynn under anæsthesia, is not concluded as we write, so we reserve the whole case for our next number.

LIQUID NOURISHMENT FOR SICK STOMACH.—The *Dublin Medical Journal* commends the following: An egg well beaten up, to which add one pint of good milk, one pint of cold water, and salt to make it palatable; let it then be boiled, and when cold any quantity of it may be taken. If it turns into curds and whey it is useless.

CHLOROFORM IN DENTISTRY.—At the late meeting of the Society, the following resolution was almost unanimously adopted:—

"*Resolved*, That, in the opinion of the Massachusetts Dental Society, the use of chloroform in dental operations is inadvisable."

NUMBER OF PHYSICIANS TO POPULATION.—Prussia has one physician for every 3,200 inhabitants, Austria one in every 4,355, Hungary one in 5,492, while Russia has but one for 14,166 people. In the United States, according to the census of 1870, there is one "doctor" to about 600 of population! Enough, one would think, to justify their being placed under some uniform national regulation.—*Med. and Surg. Reporter.*

DEVELOPMENT OF BACTERIA.—Dr. Oslez (of Canada) claims to have witnessed, under the microscope, the actual development of bacteria from small masses of agglutinated corpuscles. To observe this phenomenon, the blood is mixed with a weak solution (three-fourths per cent.) of common salt, and maintained at the temperature of the body.

PROFESSOR HYRTL, of Vienna, in a recent lecture, announced his intention to close his career as a teacher at the end of the present semester.

The lecturer stated that during an anatomical career of now forty years, the days were sacred to him when, at the beginning of each season, he used to enter the lecture-room, meeting an assembly of young men full of desire for knowledge, to receive the master's first greetings and welcome, and to be introduced into the beautiful dominion of science, which has been to him a true partner through life.—*Med. Times and Gazette.*

EXCESSIVE MORTALITY FROM MEASLES.—During the week ending Saturday, November 22, 130 deaths from measles were registered in London, the highest mortality from this disease which has ever been returned since the beginning of 1840, when the weekly returns of deaths were first published; 121 of these 130 deaths occurred in children under five years of age, whilst the death of only one adult was due to the disease.—*Brit. Med. Jour.*

IMPURE WATER.—Mr. J. M. Merrick has recently examined a specimen of water taken from a well in this city, which had not been used for fifteen years, and found in every gallon inorganic matter to the amount of 1290 grains, and 299 grains of organic and volatile matter. The well is in a low situation, with a perfect network of drains and sewers around and above it, and the soil has evidently become saturated since the well was last used.—*American Chemist.*

STYPTIC COLLODION.—The following will be found a most useful formula:—

Tannin	2 ozs.;
Alcohol	4 ozs., fl.;
Ether	12 ozs., fl.;
Soluble cotton	1 drachm and 2 scruples;
Canada balsam	1 drachm.

Dissolve the tannin in one part of the alcohol, and ether with the Canada balsam; then add the cotton.—*Dublin Medical Press and Circular.*

Extraordinary Precocity.—Dr. A. R. Kilpatrick, of Navasota, reports *(Med. and Surg. Reporter)* that a negro girl in that county has given birth to a fully developed female child, at the early age of about *eleven and one-half years.*

A Centenarian.—Robert Sexbury died on Oct. 23d, in the town of Leary, Jefferson county, New York, aged one hundred and ten years and seven months. He had acquired great reputation as a hunter on John Bowen's tract, in northern New York, where he had killed over 2200 deer. When past eighty years of age, he met with an accident which necessitated the amputation of one of his legs, and he assisted a country doctor to perform the operation without flinching. His funeral was attended by several of his children, aged between eighty and ninety years.—*Med. and Surg. Reporter.*

Sudden Death of a Spirit Medium.—On Sunday evening, a person named Benjamin Hawkes, having a great local reputation as a medium, was addressing a meeting of spiritualists and others at the Athenæum Rooms, Birmingham. After holding forth for about half an hour, during which time he became visibly excited, he proceeded to describe how, during the *séance*, the Apostle Peter had appeared to him, he (the medium) having felt the grasp of his hand. From this he argued that it was quite possible to understand how St. Thomas was enabled to thrust his hand into our Saviour's side. We are told by telegraph that the instant these last words were out of his mouth he fell back a corpse. His hearers imagined for a moment that he was under spirit control, but a surgeon being present, pronounced life to be extinct, and the meeting broke up in wild confusion. Of course, the awfulness of the death is the theme of general remark, and as the man was in excellent health, the popular idea of its cause will be readily inferred by our readers. A coroner's inquest is to be held upon the body.—*Medical Press and Circular.*

NOTES AND QUERIES.

Can anyone give information to the physicians of Boston as to what source they shall look for the payment of their fees when they are called to police stations to dress wounds or attend the sick there, or when called on by the police to attend cases either at their office or at some neighboring drug store? One authority says only the City Physician will be paid by the city. Can some one tell us the right of it?

And another question. When physicians are summoned to court to testify in regard to dressing wounds and the like, how much of a witness fee are they entitled to? Have physicians got to spend a large number of hours in court and receive only a simple witness fee? Answers will be earnestly expected.

X. Y.

Mortality in Massachusetts.—*Deaths in fifteen Cities and Towns for the week ending December* 6, 1873.

Boston, 138—Charlestown, 18—Worcester, 16—Lowell, 12—Chelsea, 8—Salem, 6—Lawrence, 10—Springfield, 9—Lynn, 11—Fitchburg, 2—Newburyport, 2—Somerville, 10—Fall River, 25—Holyoke, 2—Pittsfield, 7. Total, 276.

Prevalent Diseases.—Consumption, 46—scarlet fever, 29—pneumonia, 29—typhoid fever, 15.

GEORGE DERBY, M.D.,
Secretary of the State Board of Health.

Deaths in Boston for the week ending Saturday, Dec. 13th, 152. Males, 78; females, 74. Accident, 5—apoplexy, 4—aneurism, 2—disease of the bladder, 1—disease of the bowels, 1—bronchitis, 5—congestion of the brain, 1—disease of the brain, 5—cancer, 3—consumption, 27—convulsions, 5—debility, 6—dropsy, 2—dropsy of the brain, 4—destitution, 1—diphtheria, 1—erysipelas, 2—scarlet fever, 12—typhoid fever, 5—remittent fever, 1—disease of the heart, 4—homicide, 1—insanity, 1—disease of the knee-joint, 1—disease of the kidneys, 3—disease of the liver, 4—congestion of the lungs, 2—inflammation of the lungs, 13—marasmus, 5—old age, 2—paralysis, 2—premature birth, 6—peritonitis, 1—puerperal diseases, 2—rheumatism, 1—scalded, 1—disease of the spine, 1—suicide, 2—tumor, 2—whooping cough, 1—unknown, 4.

Under 5 years of age, 50—between 5 and 20 years, 11—between 20 and 40 years, 42—between 40 and 60 years, 24—over 60 years, 25. Born in the United States, 93—Ireland, 42—other places, 12.